A9

countermeasures

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A9.1 Best Practice Tools & Tactics

Ten safety countermeasures used throughout the Scottsbluff SS4A Safety Action Plan are provided and represent proven, FHWA-endorsed strategies selected to directly address the most common crash types, risk factors, and community safety concerns identified through data analysis and engagement.

Each countermeasure page includes a brief description of the treatment, illustrative graphics, and examples of typical applications. The intent is to provide a clear, consistent reference that supports project development, design scoping, and implementation without prescribing site-specific engineering solutions.

Countermeasure pages also summarize the roadway contexts and conditions where each treatment is most effective, including intersections, corridors, school zones, rail crossings, and transit areas. Where applicable, quick-build and permanent implementation options are identified to support phased delivery and funding flexibility.

References and links to additional design guidance are provided to support further technical review during project development. These include applicable FHWA resources, MUTCD guidance, and other nationally recognized best practices aligned with the Safe System Approach.

Finally, each countermeasure is mapped to the primary crash types and safety issues it addresses, illustrating how individual treatments contribute to reducing fatal and serious injury crashes. This alignment reinforces the plan's data-driven approach and clarifies how countermeasures are applied across multiple projects, as documented in the Project–Countermeasure Crosswalk in **APPENDIX A8 - PROJECTS**.

A9.2 Examples of Proven Safety Treatments Referenced by the Scottsbluff Countermeasures

The following list summarizes examples of FHWA, NACTO, and nationally recognized safety treatments that inform and support the ten countermeasures used in this plan. These treatments are not additional countermeasures, but illustrative examples of specific tools that may be applied individually or in combination under the broader countermeasure framework described.

Intersection Safety (CM-1, CM-3, CM-5)

- *Signal modernization & visibility*
- *Left-turn phasing (protected / flashing yellow arrow)*
- *Advance signal-ahead warning flashers*
- *Stop bars & high-visibility markings*
- *Intersection lighting*

Pedestrian Crossings (CM-1, CM-2, CM-6)

- *RRFBs*
- *PHBs / HAWKs*
- *Median refuges*
- *Curb extensions*
- *Raised crossings*

School Zone Safety (CM-4, CM-1, CM-7)

- *Standardized school zone treatments*
- *School RRFBs & flashing beacons*
- *Pick-up/drop-off circulation changes*

Corridor & Speed Management (CM-7, CM-3, CM-5)

- *Road diets & lane narrowing*
- *Speed feedback signs*
- *Traffic calming elements*
- *Corridor lighting*

Accessibility & Sidewalks (CM-8, CM-5)

- *ADA curb ramps*
- *Sidewalk gap closure*
- *Pedestrian-scale lighting*

Rail & Transit Safety (CM-9, CM-10, CM-5)

- *Rail crossing upgrades*
- *Transit stop access & lighting*

Quick-Build Safety (CM-6)

- *Paint-and-post curb extensions*
- *Interim medians*
- *Temporary lane reconfiguration*

*Countermeasures are applied individually or in combination across multiple projects, as shown in **Table A9.1**, at right, and is applied through one or more of the ten countermeasures described on the following pages and referenced in **Table A8-6**, Project–Countermeasure <—> Crosswalk in* APPENDIX A8 - PROJECTS.

The Countermeasure Summary Matrix, shown in ***Table A9-1***, summarizes the primary countermeasures included in the Scottsbluff SS4A Safety Action Plan. These treatments were selected based on crash analysis, High Injury Network (HIN) findings, public and stakeholder input, and alignment with FHWA-endorsed Safe System strategies. Detailed descriptions and implementation guidance for each countermeasure are provided in the **Countermeasure Toolbox** section of this plan.

Table A9-1. Countermeasure Summary Matrix

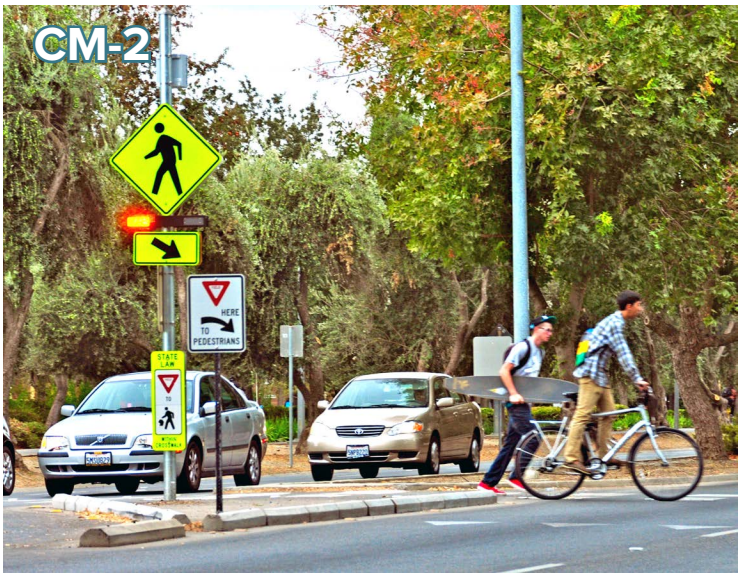
	CM ID	Counter-measure	Primary Safety Purpose	Crash Types / Risk Factors Addressed	Typical Application Contexts	Implemen-tation Flexibility
	**CM-1**	High-Visibility Pedestrian Crossings & Stop Bars	Improve pedestrian visibility and driver yielding at conflict points	Pedestrian injury; angle collisions; failure-to-yield	Signalized and unsignalized intersections; school areas; downtown crossings	Both
	**CM-2**	Rectangular Rapid Flashing Beacons (RRFBs)	Increase driver awareness and compliance at uncontrolled pedestrian crossings	Pedestrian injury; failure-to-yield; mid-block crossing conflicts	Multilane or high-speed crossings; school routes; trail crossings	Permanent
	**CM-3**	Signal Visibility & Operations Improvements	Reduce red-light running and improve predictable intersection operations	Angle collisions; rear-end crashes; red-light running	Signalized intersections; major arterials; state routes	Permanent
	**CM-4**	School Zone Safety Treatments	Slow vehicle speeds and improve safety for children near schools	Pedestrian injury; speeding; drop-off/pick-up conflicts	School zones; routes to school; youth activity areas	Both
	**CM-5**	Pedestrian-Scale & Intersection Lighting Improvements	Improve nighttime visibility of pedestrians, crossings, and conflict areas	Nighttime crashes; pedestrian injury; visibility-related crashes	Intersections; corridors; school areas; rail crossings; transit stops	Permanent
	**CM-6**	Quick-Build & Interim Safety Measures	Test and deploy rapid, low-cost safety improvements	Speed-related crashes; pedestrian conflicts; visibility issues	Neighborhoods; corridors; school areas; downtown	Both
	**CM-7**	Traffic Calming & Speed Management	Reduce vehicle speeds and cut-through traffic to lower crash severity	Speed-related crashes; loss-of-control; pedestrian injury	Residential streets; downtown corridors; school areas	Both
	**CM-8**	Sidewalk & ADA Accessibility Improvements	Provide continuous, accessible pedestrian routes for all users	Pedestrian injury; accessibility barriers; trip/fall risk	Citywide pedestrian network; routes to schools, parks, transit	Permanent
	**CM-9**	Rail Crossing Safety Improvements	Reduce conflicts and improve safety at rail-vehicle and rail-pedestrian crossings	Rail-vehicle crashes; pedestrian conflicts; visibility issues	At-grade rail crossings; rail corridors; emergency access routes	Permanent
	**CM-10**	Transit Stop Safety & Accessibility Improvements	Improve safety, visibility, and access for transit riders	Pedestrian injury; boarding/alighting conflicts; nighttime crashes	Bus stops; transit corridors; activity centers	Permanent

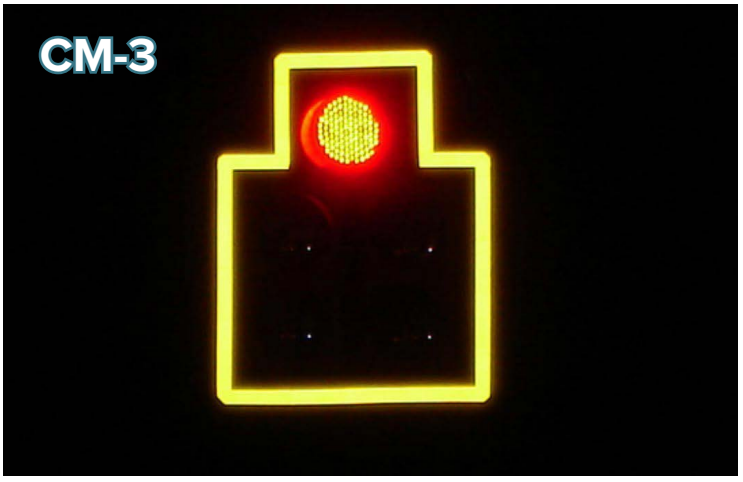
Both = *Countermeasure may be implemented as a quick-build treatment or permanent installation, depending on context and funding. Countermeasure details, example applications, and design guidance are provided in* **APPENDIX A9 - COUNTERMEASURES**.

Countermeasure Visual Examples

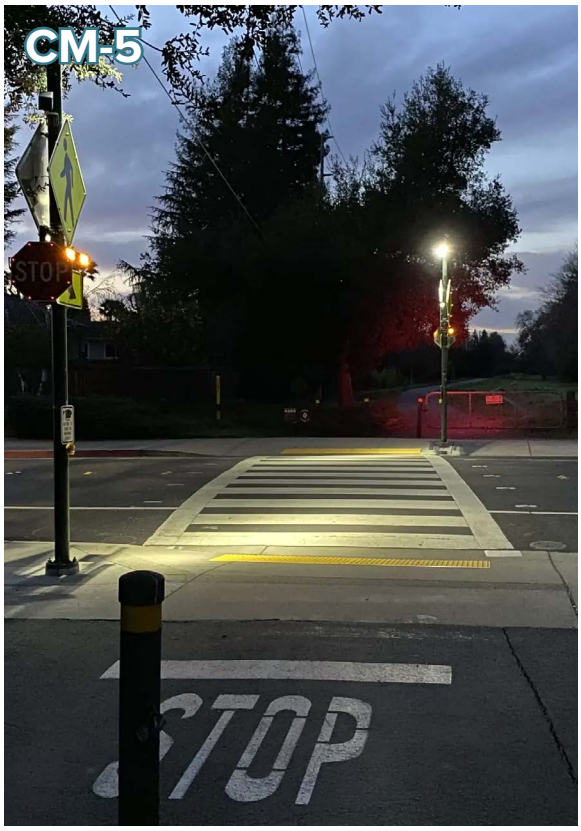
Typical applications of key safety countermeasures used throughout the Scottsbluff Safety Action Plan.





















CM-1 — High-visibility continental crosswalk

CM-2 — RRFB pedestrian crossing

CM-3 — Signal backplates with reflective border

CM-4 — School zone crossing and signage

CM-5 — Pedestrian-scale lighting

CM-6 — Quick-build curb extension (paint & post)

CM-7 — Traffic calming / lane narrowing

CM-8 — ADA-compliant curb ramp and sidewalk

CM-9 — Active rail crossing with warning devices

CM-10 — Accessible transit stop improvements

Photos represent typical applications and may vary based on site conditions.



CM-1: High-Visibility Pedestrian Crossings & Stop Bars

High-visibility pedestrian crossings use enhanced pavement markings, advance stop/yield bars, and supplemental signage to improve driver awareness and yielding behavior at locations where people walk across streets. Treatments typically include ladder or continental crosswalk markings, refreshed stop bars set back from crosswalks, and advance yield markings on multilane approaches.

These improvements are among the most cost-effective pedestrian safety countermeasures and are often implemented as quick-build treatments or paired with larger intersection and corridor upgrades.

Safety Problems Addressed

- Poor driver yielding compliance at marked and unmarked crossings
- Rear-end and angle crashes caused by late braking or unclear stopping locations
- Pedestrian visibility issues, especially at night or during adverse weather
- Inconsistent crossing treatments that create driver confusion

Examples of Proven Treatments

- High-visibility crosswalk markings (ladder, continental)
- Advance stop bars
- In-street pedestrian signs
- Yield/stop line relocation
- Crossing delineation at intersections and mid-block

Where It Works Best

- Signalized and stop-controlled intersections
- School zones and routes to school
- Downtown and commercial corridors with pedestrian activity
- Multilane or higher-speed roadways where crossing distance and exposure are higher
- Transit stop access points and trail crossings

Why It's Effective

High-visibility markings and properly placed stop bars increase the conspicuity of pedestrian crossings and reinforce where drivers are expected to stop. FHWA guidance recognizes these treatments as proven measures for improving yielding rates and reducing pedestrian crashes, particularly when paired with lighting or beacon enhancements.

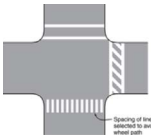
From a Safe System perspective, these treatments:

- Improve roadway user understanding (clear expectations)
- Reduce speed at conflict points
- Increase time and distance for driver reaction

Typical Applications in Scottsbluff

- US-26 intersections and crossing locations with documented rear-end and angle crashes
- School-adjacent crossings near Roosevelt, Bluffs Middle School, and Scottsbluff High School
- Downtown Broadway crossings with high pedestrian volumes
- Transit stop crossings along Avenue I, East Overland, and 27th Street
- Locations identified through the High Injury Network (HIN) and public comment map

Implementation Considerations



- NDOT Coordination: Required for crossings on or adjacent to US-26 or other state facilities
- Quick-Build Friendly: Can be installed rapidly using durable paint or thermoplastic
- Maintenance: Requires periodic refresh; should be included in annual striping programs
- Design Details: Stop bars should be placed per MUTCD guidance, set back from crosswalks to improve sight distance and pedestrian comfort

Order-of-Magnitude Cost Range (Planning Level)

- High-visibility crosswalk striping: low thousands per crossing
- Stop bar installation / refresh: low cost per approach
- Advance yield markings and signage: low cost per approach

(Exact costs vary by material type, roadway width, and number of approaches.)

Related Scottsbluff Projects

- **J1** – US-26 Intersection Improvements
- **J4** – Intersection Visibility & Stop-Bar Upgrades
- **J8** – Citywide School Zone Safety Upgrades
- **J10** – School Area Pedestrian Crossing & ADA Improvements
- **J12** – High-Visibility Crosswalk & Curb Extension Program
- **J20** – Bus Stop and Transit Access Upgrades

This countermeasure focuses on passive visibility and compliance treatments such as pavement markings and stop bars, and does not include active warning devices such as RRFBs, which are addressed separately.



CM-2: Rectangular Rapid Flashing Beacons (RRFBs)

Rectangular Rapid Flashing Beacons (RRFBs) are pedestrian-activated warning devices that use high-intensity, rapid-flashing LED lights mounted on pedestrian crossing signs. When activated, RRFBs significantly increase driver awareness and yielding at crossings where traditional signage alone has proven insufficient.

RRFBs are commonly installed at mid-block crossings and uncontrolled intersections and can be solar-powered or hard-wired depending on site conditions.

Safety Problems Addressed

- Low driver yielding rates at uncontrolled crossings
- High-speed multilane crossings with limited pedestrian protection
- School and trail crossings where pedestrian volumes are concentrated
- Locations with documented pedestrian crashes or near-misses
- Poor visibility conditions, including nighttime or skewed approaches

Examples of Proven Treatments

- RRFB systems
- Supplemental crossing warning signs
- Pedestrian-activated warning devices (non-signal)

Where It Works Best

- Mid-block crossings on arterial and collector roadways
- School crossings and youth activity areas
- Trail and pathway crossings of major streets
- Transit access points with frequent pedestrian demand
- Multilane roadways without full signal control

Why It's Effective

RRFBs are among the most effective pedestrian crossing treatments available short of full signalization. FHWA research has shown that RRFBs can dramatically improve driver yielding behavior, particularly on higher-speed and multilane roadways.

Within the Safe System framework, RRFBs:

- Increase visibility and awareness at critical conflict points
- Provide active warning rather than passive reliance on signage
- Reduce severity risk by encouraging earlier deceleration and compliance

Typical Applications in Scottsbluff

- School crossings near Roosevelt, Bluffs Middle School, and Community Christian School
- Mid-block crossings along Broadway and East Overland
- Trail crossings connecting Downtown, WNCC, YMCA, and neighborhood pathways
- Transit-related crossings near Avenue I and major bus stops
- Locations identified through public outreach as "hard to cross" streets

Implementation Considerations

- NDOT Coordination: Required for installations on US-26 or state-maintained corridors
- Power Source: Solar units work well in open corridors; shaded or urban locations may require hard-wired power
- Supplemental Treatments: Effectiveness is enhanced when paired with high-visibility markings, median refuges, or lighting
- Maintenance: Periodic inspection of flash patterns, lenses, and power systems is required

Order-of-Magnitude Cost Range (Planning Level)

- RRFB installation (complete crossing): tens of thousands per location (Cost varies by number of beacons, median installations, and power source.)

Related Scottsbluff Projects

- **J2** – US-26 & US-71 Crossing Safety Upgrades
- **J8** – Citywide School Zone Safety Upgrades
- **J9** – School Access & Congestion Management
- **J10** – School Area Pedestrian Crossing & ADA Improvements
- **J12** – High-Visibility Crosswalk & Curb Extension Program
- **J15** – Downtown—WNCC—YMCA Pathway Loop



CM-3: Signal Visibility & Operations Improvements

Signal visibility and operations improvements focus on making traffic signals easier to see, understand, and comply with—particularly at complex, high-speed, or high-volume intersections. Treatments include upgraded signal heads, reflective backplates, improved signal timing and phasing, pedestrian countdown signals, Leading Pedestrian Intervals (LPIs), and advance signal-ahead warning flashers.

These improvements are often implemented as part of signal modernization or corridor safety programs and can significantly reduce red-light running and severe angle crashes.

Safety Problems Addressed

- Red-light running and late decision-making at intersections
- Poor signal conspicuity due to sun glare, skewed approaches, or cluttered backgrounds
- Conflicts between turning vehicles and pedestrians
- Inadequate pedestrian clearance time or visibility
- Inconsistent signal operations across corridors

Examples of Proven Treatments

- Signal head upgrades
- Backplates / reflective borders
- Protected or protected-permissive left turns
- Signal re-timing
- Leading Pedestrian Intervals (LPIs)
- Signal coordination near rail crossings

Where It Works Best

- Signalized intersections on arterials and highways
- Skewed or wide intersections with limited sight distance
- Corridors with high rear-end and angle crash patterns
- Locations with heavy truck traffic
- Intersections with pedestrian activity near schools, transit stops, or downtown areas

Why It's Effective

Improving signal visibility and timing reduces uncertainty and last-second decision-making, two major contributors to severe intersection crashes. FHWA recognizes signal visibility enhancements and pedestrian-focused signal timing as proven safety strategies, especially when paired with corridor-wide consistency.

From a Safe System perspective, these treatments:

- Improve user comprehension and expectancy
- Reduce speed and conflict severity
- Provide additional time and separation for vulnerable users

Typical Applications in Scottsbluff

- US-26 intersections at Avenue I, Avenue B, East 27th Street, and 21st Avenue
- Intersections with documented red-light running or rear-end crashes
- School-adjacent signalized crossings
- Locations where signals are positioned on diagonal approaches
- High Injury Network (HIN) signalized intersections

Implementation Considerations

- NDOT Coordination: Required for signal work on US-26 or state-owned facilities
- Design Standards: All upgrades must meet MUTCD and NDOT signal design criteria
- Pedestrian Focus: LPIs and countdown timers should be considered where pedestrian volumes are present
- System Integration: Signal changes should align with corridor timing plans and traffic detection systems

Order-of-Magnitude Cost Range (Planning Level)

- Signal visibility upgrades (backplates, heads): low to moderate cost per approach
- Signal timing and phasing updates: low to moderate cost per intersection
- Advance signal-ahead warning flashers: moderate cost per approach

Related Scottsbluff Projects

- **J1** – US-26 Intersection Improvements
- **J2** – US-26 & US-71 Crossing Safety Upgrades
- **J5** – Targeted Intersection Signal Timing Improvements
- **J7** – High Injury Network Corridor Enhancements
- **J17** – Downtown Streetscape and Broadway Corridor Enhancements



CM-4: School Zone Safety Treatments

School zone safety treatments include a coordinated package of signage, pavement markings, flashing beacons, speed management tools, and crossing enhancements designed to create consistent, predictable conditions around schools. These treatments emphasize visibility, driver awareness, and operational safety during arrival and dismissal periods.

Standardizing school zone treatments citywide helps reduce confusion and improves compliance across all school locations.

Safety Problems Addressed

- Speeding and driver non-compliance in school zones
- Inconsistent signage, speed limits, and operating hours
- Congestion and conflicts during drop-off and pick-up
- Poor pedestrian visibility near schools
- Unclear crossing locations for students

Examples of Proven Treatments

- School zone signage
- Flashing beacons
- Speed feedback signs in school areas
- School crossing markings
- Pick-up/drop-off circulation improvements

Where It Works Best

- Elementary, middle, and high school frontages
- School walking routes and designated crossings
- Streets with on-street parking near schools
- Locations with high volumes of young pedestrians
- Areas identified through school staff and parent input

Why It's Effective

Children are among the most vulnerable roadway users, and school zones require heightened clarity and predictability. FHWA and Vision Zero guidance emphasize standardized school zone treatments as a foundational safety strategy that supports both engineering and enforcement.

From a Safe System perspective, these treatments:

- Reduce vehicle speeds where injury risk is highest
- Improve visibility and recognition of school activity
- Support enforcement and operational consistency

Typical Applications in Scottsbluff

- School zones at Roosevelt, Bluffs Middle School, Scottsbluff High School, and Community Christian School
- Crossings on 2nd Avenue, 5th Avenue, and 27th Street
- School-adjacent segments identified through public input and crash data
- Locations with documented congestion or near-miss activity

Implementation Considerations

- Standardization: A single citywide school zone standard improves driver understanding
- Flashing Beacons: Should be synchronized and clearly visible in all conditions
- Enforcement Coordination: Design should support targeted enforcement during school hours
- Maintenance: Regular checks are needed to ensure signs and beacons remain operational

Order-of-Magnitude Cost Range (Planning Level)

- School zone signage and pavement markings: low cost per location
- Flashing beacons: moderate cost per school frontage
- Crossing enhancements: low to moderate cost per crossing

Related Scottsbluff Projects

- **J3** – 9th Avenue & East Overland Intersection Improvements
- **J8** – Citywide School Zone Safety Upgrades
- **J9** – School Access & Congestion Management
- **J10** – School Area Pedestrian Crossing & ADA Improvements



CM-5: Pedestrian-Scale & Intersection Lighting Improvements

Pedestrian-scale and intersection lighting improvements enhance visibility for people walking and driving during nighttime and low-light conditions. Treatments include new or upgraded streetlights, focused pedestrian lighting at crossings, and lighting retrofits that improve uniformity and reduce dark zones.

Lighting improvements are especially important along arterials, near schools, transit stops, rail crossings, and downtown areas.

Safety Problems Addressed

- Nighttime pedestrian crashes and near-misses
- Poor visibility at crossings and intersections
- Dark corridors that discourage walking or transit use
- Limited recognition of pedestrians by drivers
- Uneven lighting near rail crossings and commercial driveways

Examples of Proven Treatments

- Intersection lighting
- Pedestrian-scale lighting
- Crossing illumination
- Rail-adjacent lighting
- Transit stop lighting

Where It Works Best

- High-speed or multilane corridors
- Pedestrian crossings and medians
- Downtown streets with evening activity
- School and transit stop areas
- Rail-adjacent corridors and crossings

Why It's Effective

Improved lighting increases the distance at which drivers can detect pedestrians and recognize conflicts. FHWA identifies lighting upgrades as a proven strategy for reducing nighttime crash severity, particularly at intersections and crossings.

Within the Safe System framework, lighting:

- Improves detection and reaction time
- Reduces crash severity during nighttime conditions
- Supports equitable access for people who rely on walking or transit

Typical Applications in Scottsbluff

- Broadway corridor and Downtown core
- East Overland and Avenue I corridors
- School-area crossings and pathways
- Rail crossings along Railway Street and Broadway
- Bus stops and transit access routes

Implementation Considerations

- NDOT Coordination: Required on state highways or signalized intersections
- Design Balance: Lighting should improve visibility without excessive glare
- Energy Efficiency: LED retrofits reduce long-term operating costs
- Maintenance: Lighting plans should include inspection and replacement cycles

Order-of-Magnitude Cost Range (Planning Level)

- Lighting retrofit (LED conversion): moderate cost per fixture
- New pedestrian-scale lighting: moderate cost per pole
- Intersection lighting upgrades: moderate to higher cost per intersection

Related Scottsbluff Projects

- **J4** – Intersection Visibility & Stop-Bar Upgrades
- **J7** – High Injury Network Corridor Enhancements
- **J12** – High-Visibility Crosswalk & Curb Extension Program
- **J17** – Downtown Streetscape and Broadway Corridor Enhancements
- **J20** – Bus Stop and Transit Access Upgrades



CM-6: Quick-Build & Interim Safety Measures

Quick-build and interim safety measures use low-cost, rapidly deployable materials—such as pavement markings, delineators, modular curb elements, and temporary signage—to improve safety while longer-term capital projects are developed. These treatments allow cities to test designs, respond quickly to safety concerns, and deliver near-term crash reduction benefits.

Safety Problems Addressed

- Excessive speeds and unclear lane assignments
- Wide crossings and long pedestrian exposure distances
- Driver confusion at complex or changing intersections
- Delayed implementation of permanent safety projects

Examples of Proven Treatments

- Paint-and-post curb extensions
- Temporary refuge islands
- Flexible delineators
- Interim striping changes
- Pilot traffic calming installations

Where It Works Best

- High Injury Network (HIN) corridors and intersections
- School zones and neighborhood streets
- Downtown and commercial areas with changing conditions
- Locations identified through public input or recent crash trends

Why It's Effective

Quick-build measures reduce risk by narrowing travel lanes, clarifying movements, and increasing driver awareness at conflict points. FHWA supports interim treatments as part of a Safe System approach because they deliver immediate safety benefits and allow agencies to refine designs before permanent construction.

Typical Applications in Scottsbluff

- Interim curb extensions and lane reconfiguration on Broadway
- Temporary pedestrian refuges near schools and downtown crossings
- Paint-and-post treatments along US-26 parallel routes
- Pilot treatments responding to neighborhood speed concerns

Implementation Considerations

- Speed of Deployment: Can often be installed within weeks
- Evaluation: Before/after data collection is critical
- Maintenance: Requires monitoring and periodic refresh
- Transition: Successful pilots should inform permanent designs

Order-of-Magnitude Cost Range (Planning Level)

- Temporary curb extensions and lane reconfiguration: low cost per location
- Interim signage and markings: very low cost per location

Related Scottsbluff Projects

- **J4** – Intersection Visibility & Stop-Bar Upgrades
- **J6** – Neighborhood Traffic Calming
- **J7** – High Injury Network Corridor Enhancements
- **J12** – High-Visibility Crosswalk Program



CM-7: Traffic Calming & Speed Management

Traffic calming and speed management strategies use roadway design, operational changes, and visual cues to reduce vehicle speeds and discourage cut-through traffic. Treatments include lane narrowing, curb extensions, chicanes, mini-roundabouts, speed feedback signs, and targeted access management.

Safety Problems Addressed

- Excessive speeds on neighborhood and corridor streets
- Cut-through traffic in residential areas
- Loss-of-control and pedestrian injury crashes
- Speed-related severity on wide or over-designed roadways

Examples of Proven Treatments

- Lane narrowing
- Road diets
- Speed humps / cushions
- Chicanes
- Mini-roundabouts
- Gateway treatments
- Speed feedback signs (outside school zones)

Where It Works Best

- Residential neighborhoods
- Collector streets with speeding complaints
- School and park areas
- Downtown and mixed-use corridors

Why It's Effective

Lower speeds directly reduce crash severity and increase reaction time. FHWA and Vision Zero guidance emphasize speed management as one of the most powerful tools for preventing fatal and serious injuries. Design-based calming is particularly effective because it does not rely solely on enforcement.

Typical Applications in Scottsbluff

- Neighborhood avenues with recurring speeding concerns
- Broadway corridor and downtown approaches
- School-area streets with arrival and dismissal congestion
- Corridors identified through public input and speed studies

Implementation Considerations

- Community Engagement: Early outreach improves acceptance
- Phasing: Temporary pilots can precede permanent construction
- Emergency Access: Designs must accommodate fire and EMS vehicles
- Coordination: NDOT involvement required on state facilities

Order-of-Magnitude Cost Range (Planning Level)

- Speed feedback signs and striping changes: low to moderate cost
- Permanent traffic calming features: moderate cost per location

Related Scottsbluff Projects

- **J6** – Neighborhood Traffic Calming
- **J7** – High Injury Network Corridor Enhancements
- **J17** – Downtown Streetscape Enhancements
- **J18** – East Overland Corridor Improvements



CM-8: Sidewalk & ADA Accessibility Improvements

Sidewalk and ADA accessibility improvements focus on creating a continuous, accessible pedestrian network that meets current ADA standards. Treatments include sidewalk gap closure, reconstruction of non-compliant segments, ADA curb ramps with detectable warnings, driveway crossing upgrades, and removal of physical barriers.

Safety Problems Addressed

- Missing or discontinuous sidewalks
- Non-compliant curb ramps and cross-slopes
- Barriers for people with disabilities, seniors, and children
- Pedestrian exposure to vehicle travel lanes

Examples of Proven Treatments

- Sidewalk gap closure
- ADA curb ramps
- Detectable warnings
- Cross-slope corrections
- Pedestrian route continuity

Where It Works Best

- Routes to schools, parks, and community facilities
- Transit stop access routes
- Downtown and older neighborhoods
- Corridors with documented pedestrian activity

Why It's Effective

Providing a complete and accessible sidewalk network reduces pedestrian exposure to traffic and supports equitable mobility. FHWA emphasizes ADA compliance and pedestrian accessibility as foundational safety strategies, particularly for vulnerable users.

Typical Applications in Scottsbluff

- Sidewalk gaps near schools and transit stops
- Downtown corridors with aging infrastructure
- Neighborhood routes identified through the ADA transition plan
- Locations highlighted through public comment and stakeholder input

Implementation Considerations

- Prioritization: Focus on schools, transit, and HIN corridors
- Coordination: Combine with resurfacing or utility work when possible
- Standards: All upgrades should meet current ADA requirements
- Funding: Eligible for SS4A and complementary programs

Order-of-Magnitude Cost Range (Planning Level)

- New sidewalk construction: moderate cost per linear foot
- ADA ramp installation: low to moderate cost per corner

Related Scottsbluff Projects

- **J10** – School Area Pedestrian & ADA Improvements
- **J11** – Sidewalk Gap Elimination Program
- **J12** – High-Visibility Crosswalk Program
- **J20** – Transit Stop and Access Upgrades



CM-9: Rail Crossing Safety Improvements

Rail crossing safety improvements address surface condition, visibility, and pedestrian accommodation at roadway–rail intersections. Treatments may include crossing surface rehabilitation, upgraded warning signage and markings, improved lighting, pedestrian crossing delineation, and coordination with traffic signals and rail operations.

Safety Problems Addressed

- Rough crossing surfaces causing loss of control
- Limited visibility at rail approaches
- Inadequate pedestrian accommodations
- Delays affecting emergency access and circulation

Examples of Proven Treatments

- Crossing surface rehab
- Rail warning signage
- Pavement markings
- Pedestrian rail crossing delineation
- Lighting at crossings
- Signal/rail coordination

Where It Works Best

- Urban rail crossings with high traffic volumes
- Locations with pedestrian or transit activity
- Corridors critical to emergency response
- Crossings identified through public safety and community input

Why It's Effective

Improving rail crossing visibility and surface condition reduces driver uncertainty and vehicle maneuvering errors. FHWA recognizes rail crossing upgrades as important safety measures when coordinated with rail operators and integrated into corridor safety planning.

Typical Applications in Scottsbluff

- Crossings at Avenue I, Broadway, and East Overland
- Locations with reported vehicle damage or near-misses
- Routes serving schools, transit, or emergency services

Implementation Considerations

- Coordination: Requires close collaboration with the railroad
- Scheduling: Work windows may be limited
- Eligibility: Some elements may require cost-sharing or separate agreements
- Long-Term Planning: Findings can inform future grade separation studies

Order-of-Magnitude Cost Range (Planning Level)

- Signing, markings, and lighting: moderate cost per crossing
- Surface rehabilitation: higher cost per crossing

Related Scottsbluff Projects

- **J18** – East Overland Corridor Improvements
- **J19** – US-26 Parallel Routes
- **J21** – Rail Crossing Upgrades



CM-10: Transit Stop Safety & Accessibility Improvements

Transit stop safety improvements enhance comfort, visibility, and accessibility for people using public transportation. Treatments include ADA-compliant boarding pads, shelters and benches, lighting, defined bus pull-outs or curb extensions, and improved pedestrian connections to stops.

Safety Problems Addressed

- Riders waiting close to traffic lanes
- Poor lighting and nighttime visibility at stops
- Uneven or inaccessible boarding areas
- Unsafe crossings near high-use stops

Examples of Proven Treatments

- ADA boarding pads
- Shelters and benches
- Lighting
- Bus pull-outs
- Safe pedestrian access to stops
- Crossing improvements near stops

Where It Works Best

- High-ridership stops on arterials
- Downtown and commercial corridors
- Stops near schools, healthcare, and senior services
- Locations with documented pedestrian conflicts

Why It's Effective

Safe, well-lit, and accessible transit stops reduce pedestrian exposure and support equitable access to transportation. FHWA guidance emphasizes transit stop improvements as part of a complete and safe multimodal system.

Typical Applications in Scottsbluff

- Stops along Avenue I, East and West Overland
- Downtown and Broadway corridor stops
- YMCA, WNCC, and major employment centers
- Locations identified through transit operator input

Implementation Considerations

- Coordination: Work closely with transit providers on stop locations
- Lighting: Pedestrian-scale lighting improves safety and comfort
- Accessibility: All upgrades should meet ADA requirements
- Integration: Pair with crossing and sidewalk improvements

Order-of-Magnitude Cost Range (Planning Level)

- Bus stop pads and shelters: moderate cost per stop
- Lighting and access improvements: low to moderate cost per location

Related Scottsbluff Projects

- **J20** – Bus Stop and Transit Access Upgrades
- **J12** – High-Visibility Crosswalk Program
- **J7** – High Injury Network Corridor Enhancements

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